

IN THE CLAIMS

1-12. (Cancelled)

13. (Currently amended) A data recovery circuit for recovering a sequence of data tokens encoded in an analog signal, said data recovery circuit comprising:

a data transition detector (DTD) circuit detecting a transition in said analog signal;

a sampler circuit sampling said analog signal to generate a sample data token, said sampler circuit sampling said analog signal responsive to the detection of said transition;

a multiplexor providing said sample data token instead of another data token as one of said sequence of data tokens;

wherein said sample data token is received after said transition in said analog signal; [[and]]

a recovery circuit receiving said analog signal and generating a clock-out signal delayed in phase from a sampling clock signal, wherein said sampling clock signal is based on said analog signal; and

wherein said recovery circuit generates a clock-out clock signal having rising edges approximately at the center of said first plurality of data tokens, said data recovery circuit further comprising:

a second flip-flop receiving a IS NEW DATA signal indicating whether present data token generated by said multiplexor

is not equal to a data sample presently received on said analog signal, said second flip-flop being clocked by a falling edge of said clock-out clock signal such that said IS NEW DATA signal provided on said falling edge as a select signal for said multiplexor; and

a delay block receiving said clock-out clock signal and delaying said clock-out clock signal by an amount equaling propagation delays caused by said second flip-flop and said multiplexor,

said data recovery circuit providing the output of said delay block and the output of said multiplexor as said sequence of data tokens and a corresponding clock signal respectively.

14-16. (Cancelled)

17. (Currently amended) The data recovery circuit of claim [[16]] 13, wherein each of said sequence of data tokens comprises a bit.

18. (Cancelled)

19. (Cancelled)

20. (Currently amended) A system recovering a sequence of data tokens encoded in an analog signal, said system comprising:
a data recovery circuit for recovering said sequence of data

tokens, said data recovery circuit comprising:

a data transition detector (DTD) circuit detecting a transition in said analog signal;

a sampler circuit sampling said analog signal to generate a sample data token, said sampler circuit sampling said analog signal responsive to the detection of said transition; and

a multiplexor providing said sample data token instead of another data token as one of said sequence of data tokens;

an application block receiving and using said sequence of data tokens;

wherein said sample data token is received after said transition in said analog signal; [[and]]

a recovery circuit receiving said analog signal and generating a clock-out signal delayed in phase from a sampling clock signal, wherein said sampling clock signal is based on said analog signal; and

wherein said recovery circuit generates a clock-out clock signal having rising edges approximately at the center of said first plurality of data tokens, said data recovery circuit further comprising:

a second flip-flop receiving a IS NEW DATA signal indicating whether present data token generated by said multiplexor is not equal to a data sample presently received on said analog signal, said second flip-flop being clocked by a falling edge of said clock-out clock signal such that said IS NEW DATA signal provided on said falling edge as a select signal for said

multiplexor; and

a delay block receiving said clock-out clock signal and
delaying said clock-out clock signal by an amount equaling
propagation delays caused by said second flip-flop and said
multiplexor,

said system providing the output of said delay block and
the output of said multiplexor as said sequence of data tokens and
a corresponding clock signal respectively.

21-23. (Cancelled)

24. (Currently amended) The system of claim ~~[[23]]~~ 20,
wherein each of said sequence of data tokens comprises a bit.